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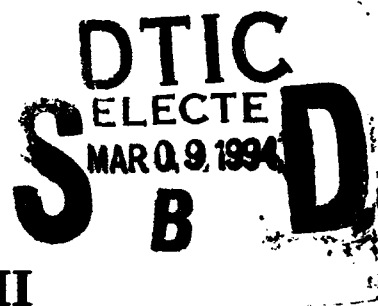


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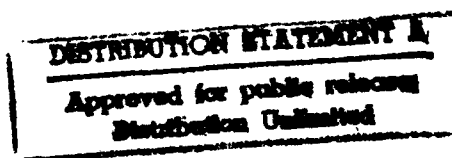
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# U.S. Targeting Priorities in a Post-START Environment

Colonel  
K. Louis Mills, III  
U. S. Air Force



*Faculty Research Advisor*  
Lieutenant Colonel Richard J. Barringer, USAF



The Industrial College of the Armed Forces  
National Defense University  
Fort McNair, Washington, D.C. 20319-6000

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## **Abstract**

The Cold War is over. The West won. The Soviet Union is gone. Iraq was going for "the Bomb," but was driven out of Kuwait by a U.S.-led coalition using precision-guided bombs and missiles with conventional explosives. So why are Minuteman and Peacekeeper and Trident II ballistic missiles still armed and on alert? Because the nuclear weapons of the Soviet stockpile did not go away. Because there are other nations with nuclear ambitions. Because the United States cannot accept ever knowing the answer to the question of how little deterrence is not enough.

Colonel K. Louis Mills, III

U.S. Targeting Priorities in a Post-START Environment (A92)

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**U.S. Targeting Priorities in a  
Post-START Environment**

President Bush defined the basic interests and objectives of America in his *National Security Strategy of the United States*. The most fundamental of these are

**The survival of the United States as a free and independent nation, with its fundamental values intact and its institutions and people secure.**

The United States seeks, wherever possible in concert with its allies, to:

- deter any aggression that could threaten the security of the United States and its allies
- and - should deterrence fail - repel or defeat military attack and end conflict on terms favorable to the United States, its interests and its allies . . . <sup>1</sup>

The most ominous threat to the "survival" of the United States is, and will be, the strategic nuclear arsenal of the

Commonwealth of Independent States until Russia becomes the sole strategic nuclear power among the former Soviet republics.

In March, 1991, prior to the most unforeseen of developments regarding the Soviet Union, the Department of Defense (DoD) described that threat this way:

The most enduring concern for US defense planners is that, notwithstanding its evolving ideology and the intentions of its current leadership, the Soviet Union remains the one country in the world capable of destroying the United States with a single devastating attack. However, the rationale for such an attack is difficult to construe. Nevertheless, until and unless the Soviet strategic nuclear arsenal is vastly modified, the cornerstone of US military strategy must continue to be a modern, credible, flexible, and survivable nuclear deterrent force.<sup>2</sup>

Much has happened since that March, 1991, appraisal in the *Joint Military Net Assessment*. The Strategic Arms Reduction Talks (START) Treaty was signed the following July 31. Soviet President Mikhail Gorbachev survived an attempted coup from August 19-22. President Bush announced new, unilateral arms cuts initiatives on September 27 and Gorbachev made his own arms cut announcement on October 5. Finally, Russia joined with Ukraine

and Belarus to declare that the USSR had ceased to exist as of December 8.

Because of the uncertainty in the redeployment and final disposition of the strategic weapons of the former Soviet Union and the disturbing questions regarding the possible loss of control over those weapons, Chairman of the Joint Chiefs of Staff General Colin Powell wrote that one of the new realities is that

while the Soviet Union has disappeared, we must not lose sight of the fact that more than 27,000 nuclear weapons and a huge Red army are still in existence. This strategic nuclear capability can destroy us in 30 minutes, so we must continue to deal with it. It must be deterred.<sup>3</sup>

The START Treaty and Gorbachev's complementary response to the Bush initiative would have gone far towards the "vastly modified" force envisioned by the DoD. But, with the breakup of the Soviet Union and the potential for three new strategic nuclear republics it appeared that it might not be possible to ratify the treaty and Gorbachev was no longer in power to continue to push his arms cuts proposals.

My initial purpose was to determine "U.S. targeting priorities in a post-START environment." That is, I intended to analyze the USSR target set (categories, types and numbers) and



the U.S. strategic nuclear force structure (types and numbers of launchers, total warheads, and launcher alert status) to determine a weapons allocation that maximized U.S. strategic nuclear capabilities and thus enhanced the likelihood of achieving President Bush's primary national objective - assuring national survival.

This, of course, presumed a singular USSR where "the reformed center will probably retain control over strategic nuclear weapons . . . ." However, when Russia, Ukraine, and Belarus declared an end to the USSR, Leonid Kravchuk, the Ukrainian president, announced that the nuclear arsenal would be controlled by a "troika" of the leadership of the three Slavic republics and a simultaneous push of three buttons would be necessary to launch strategic weapons.<sup>5</sup>

### **Threats to the United States**

Chairman Powell and the DoD noted that the strategic nuclear weapons of the Soviet Union can destroy the United States in 30 minutes. This is the threat to the survivability of the country with its institutions intact.

China has developed a space launch capability and has conducted at least 37 nuclear weapons tests,<sup>6</sup> including an atmospheric explosion with a yield of about four megatons.<sup>7</sup> It is reasonable to assume that these capabilities have been combined into both strategic and theater nuclear weapons systems

that threaten the U.S. mainland as well as U.S. and allied forces throughout the Pacific Ocean area and Southwest Asia.

In addition to these strategic threats to the United States, there are several other nations with ballistic missile programs. Some of these countries also have demonstrated or suspected capabilities in chemical or biological weapons programs and there are countries with missile programs and suspected or emerging nuclear weapons development efforts. Any U.S. forces deployed outside the continent may be within range of the various ballistic missiles and the unconventional warheads of these Third World weapons of mass destruction.

U.S. economic interests are more widely dispersed throughout the world than U.S. forces and are therefore more vulnerable. However, these interests are more likely to be targeted by independent or state-sponsored terrorist groups using conventional weapons and explosives than by regional weapons of mass destruction.

### **Deterrence**

In his 1991 annual report Secretary Cheney put deterrence as the number one priority in America's new defense strategy. "The cornerstone of U.S. defense policy is to deter aggression and coercion against the United States and its allies and friends. Deterrence is achieved by convincing potential adversaries that the cost of aggression would exceed any possible gain." The *Joint Military Net Assessment* described what was necessary to

achieve deterrence. "The United States therefore maintains a diverse mix of survivable and capable strategic nuclear offensive forces to hold at risk those assets most valued by Soviet leadership and provide a range of retaliatory attack options."<sup>9</sup> And in late summer, President Bush reminded us that "(E)ven in a new era, deterring nuclear attack remains the number one defense priority of the United States."<sup>10</sup>

The Cold War emphasized the strategic nuclear threat of the Soviet Union. U.S. policies regarding this threat resulted in an evolution of deterrent strategies ranging from "massive retaliation" during the Eisenhower years through "mutually assured destruction" of the early 1970s to the "assured survival" President Reagan sought with the Strategic Defense Initiative (SDI) in the spring of 1983.

The diverse mix of strategic nuclear forces -- the TRIAD of land-based intercontinental ballistic missiles (ICBMs), sea-launched ballistic missiles (SLBMs), and strategic bombers -- was developed to deter Soviet aggression - primarily a massive nuclear attack - based on two of three classic concepts: denial of war aims (from a range of retaliatory attack options) and punishment (an attack against most valued assets). The third concept, that the U.S. might win any war, can be viewed as an extension of one or both of the others.<sup>11</sup>

Down one level from strategic deterrence was NATO's Flexible Response strategy and the NATO triad of conventional forces, theater nuclear weapons, and - if those failed to deter

aggression or proved inadequate to win the war - U.S. strategic nuclear forces.<sup>12</sup>

Deterrence, like beauty, is in the eyes of the beholder. It is what the adversary truly believes with respect to U.S. capabilities and resolve, not what we think or hope he believes, that determines his actions. National Security Advisor Brent Scowcroft described it this way.

The essence of our planning to deter nuclear war must be not what we think about its possibility but what the Soviets think about it. We have to convince the Soviets that they must never conclude that nuclear war is a rational course of action.<sup>13</sup>

U.S. deterrence strategy has been determined using two sometimes debatable assumptions. First, the aggressor is taken to be a "rational actor." Second, that rational actor thinks like an American. Of these, only the former may be conceptually true. The central government, the party elite as well as the military leadership, of the former Soviet Union has been "rational" for over 40 years, having never concluded that a nuclear attack against the United States or a ground offensive against the NATO area could be a success. While their calculus was undoubtedly similar to ours, their going-in assumptions were almost certainly different as were the weight factors used at the various decision points.

Thus, whenever I assess targeting rationale I must always be aware that it is what the potential adversary, be it the leadership of the Soviet Union, the Commonwealth of Independent States, Russia, or any other country, defines as their most valued assets that must be held at risk.

### **Most Valued Assets**

So what is it that "they" value most? And just who are "they?" In the days of the Cold War it was easy to guess the answer. Based on a four-decade plus effort to build deep underground shelters for civilian and military leadership, the survival of the Communist Party elite and military hierarchy and the Soviet Union as a functioning state was the answer.<sup>14</sup> The Scowcroft Committee determined that those assets were, in fact, "military command bunkers and facilities, missile silos, nuclear weapons and other storage, and the rest - which the Soviet leaders have given every indications by their actions they value most, and which constitute their tools of control and power."<sup>15</sup> Former Secretary of Defense Harold Brown believed U.S. nuclear forces should

threaten retaliation against assets that the Soviet leadership appear to prize - their urban-industrial society, their nuclear and conventional military forces, and the hardened shelters that protect their

political and military control centers as well as their own lives.<sup>16</sup>

Dwight Eisenhower condensed it to its essence. "There is nothing in the world that the Communists want badly enough to risk losing the Kremlin."<sup>17</sup>

I presume the same is true for Russia as well as for the appropriate government headquarters buildings in each capital of the three other former Soviet republics currently possessing strategic nuclear weapons: Kiev, Ukraine; Mensk, Belarus; and Alma-Ata, Kazakhstan. The threatened destruction of the cities during an attack against the leadership facilities is deterrence by threat of punishment.

Similarly, the threatened destruction of the leadership facilities, and very possibly the leaders themselves, as well as the military forces of any other potential aggressor nation should act as a deterrent to undesirable behavior by that regime.

### **U.S. Capabilities**

To deter aggression, the U.S. must be able to put at risk those most valued assets of any potential adversary. Can we? That is, does the strategic nuclear arsenal of the U.S. have sufficient capabilities against the leadership facilities and command bunkers as well as the conventional and nuclear military forces of the former Soviet Union to deter an attack?

If the targets are ICBM silos built by the former Soviet Union and which may have been upgraded during the modernization programs begun by the Soviet Union and now continued by the Commonwealth of Independent States and Russia, how hard are they? Do U.S. weapons have a credible probability of destroying them?

In 1972, some concrete objects were estimated to be hardened to a blast pressure of 10,000 pounds per square inch (psi) and ICBM silos and control centers were hardened to the "low thousands" of psi.<sup>18</sup> By 1984 ICBM silo hardnesses were estimated to be 5,000 psi and perhaps even higher.<sup>19</sup> Such steel and concrete structures are ductile and can deform without being destroyed. The hardness depends on the yield of the attacking weapon.<sup>20</sup> A target's baseline hardness is referenced to a yield of 20 kilotons (approximately that of the Trinity atomic bomb test), but can be evaluated for any other yield.

Based on the yield and accuracy of U.S. weapons systems as well as the single warhead kill probability given in a table taken from a Congressional Budget Office (CBO) report (as published in *Air Force Magazine*<sup>21</sup>) for START forces in the year 2006, and presuming the overall reliabilities of U.S. ICBMs and SLBMs are about 90%,<sup>22</sup> the "as is" hardness of the [unidentified] target is in the 6,000 to 6,500 psi range. Then the hardness for a very ductile target, one with a strong yield dependence, is about 25,000 psi for a 20 kiloton (kt) weapon and between 5,000 and 5,500 psi for a one megaton "standard" weapon. Based on these hardness values, I presume it is an ICBM silo.

From the CBO table, the best the U.S. could expect in a one-on-one attack was a 0.76 probability of damage from the Peacekeeper. (The probability of damage in the table includes weapon system reliability and is more commonly called damage expectancy.) How much could be gained if the higher yield of the Small ICBM were paired with the Peacekeeper's greater accuracy? The combination results in a damage expectancy of 0.86, and is approaching the likely weapon system reliability of 90 percent. That is, even if the yield and accuracy of an attacking weapon system are such that one can expect "sure kill," only those warheads actually reaching the target will destroy the target and the overall damage expectancy is the reliability of the system. This ICBM combination would have a two-on-one damage expectancy of 0.98 without fratricide. With fratricide the value still would be greater than 0.90.

Neither Peacekeeper, as deployed or even with the higher yield of the Small ICBM, nor the Trident II SLBM has adequate capability against the underground command and leadership relocation facilities.<sup>23</sup> These buried facilities could be those [undefined] concrete objects capable of withstanding 10,000 psi. It does not seem unreasonable that buried steel and concrete tunnel facilities might be about twice as hard as a surface-flush ICBM silo. Whereas the airblast environment from a nuclear explosion is defined in pounds per square inch, ground shock (stress) is normally described in terms of kilobars (kbar). One kilobar is equal to 14,500 psi, or nearly 1000 times standard



atmospheric pressure. Therefore, a 10,000-psi tunnel is hardened to about 0.7 kbar.

Since the best of our most modern weapons do not give an acceptable damage expectancy, alternative attack options are required. There are two ways to drive a high-stress ground shock deeper than can be done by current systems: very-high yield surface-burst weapons or burying a medium-yield weapon. When a nuclear weapon explodes underground the energy that produces the fireball and airblast of a surface explosion is contained by the ground and creates a ground shock equal to that from a much larger yield surface explosion. The enhancement factor from an earth-penetrating weapon (EPW) may be as high as  $40^{24}$  or  $50^{25}$  and depends on the depth of burst, the weapon yield, and the target area geology.

Other point targets (single buildings) are significantly "softer" than ICBM silos as are area targets (airfields and deployed troops), perhaps a few tens of psi.<sup>26</sup> Even the "least capable" of the U.S. systems, the 100-kt Poseidon C-4 with 300 meter accuracy (from the CBO table), has a probability of damage (for perfect reliability) greater than 0.99 against a 20-psi target. A 100-kt explosion would damage all-20 psi targets out to 2/3 mile and destroy any softer targets.

Conventional U.S. weapons may be able to destroy some if not most of the nuclear weapon and ballistic missile manufacturing and assembly facilities in China. However strategic nuclear weapons may be required should China's missile launch facilities

be extremely hard. China possibly could have a government and military leadership relocation program similar to that of the Soviet Union, with large, underground control centers and command posts. Such targets may require nuclear weapons to be put "at risk."

### U.S. Vulnerabilities

One additional question is whether or not these capabilities will exist for the retaliatory second strike? That is, would the U.S. have the missile force to attempt a retaliatory launch if it rides out the initial attack?

The DoD acknowledged in the 1986 edition of *Soviet Military Power* that the USSR's SS-18 Mod 4 ICBM force could destroy 65 to 80 percent of the U.S. missile force in a two-on-one attack.<sup>27</sup> When the Minuteman II missiles were taken off alert Saturday afternoon, September 28, 1991, there were only 550 fixed U.S. ICBM silos.<sup>28</sup>

The danger is increasing because the Soviet Union was continuing to modernize the SS-18 force with the advanced SS-18 Mod 5 systems.<sup>29</sup> The 1991 edition of *Soviet Military Power*, retitled *Military Forces in Transition*, assesses each SS-18 Mod 5 reentry vehicle, with improved warhead yield and accuracy, as having "almost double the capability of those of the Mod 4 against U.S. ICBM silos, which the U.S. will substantially reduce under START."<sup>30</sup> Depending on how this factor of almost two is measured, a no-fratricide, two-on-one attack against U.S. ICBM

silos by the SS-18 Mod 5 force could destroy perhaps 93 to 98 percent of the Minuteman and Peacekeeper missiles targeted. Even with fratricide, a two-on-one attack might destroy about 90 percent of the U.S. missile force targeted.

### Discussion

The Commonwealth of Independent States was initially Russia, Ukraine, and Belarus. Kazakhstan and seven other former Soviet republics joined within weeks. Dissent was almost immediate. Some former republics wanted their own armies while others consented to a unified army under the Commonwealth with republics maintaining only a "national guard." The Ukrainian government wanted all military forces to take a new loyalty oath to Ukraine, but most of the officers were Russian and resisted. And what about the Black Sea Fleet? Russia claimed it was "strategic" and protected the Commonwealth. Ukraine declared it was "non-strategic," at least once the tactical nuclear weapons were removed as had been promised by Gorbachev in his response to President Bush's September 27, 1991, initiative.<sup>31</sup>

The four republics with strategic nuclear weapons agreed to maintain a unified command for the strategic nuclear missiles. Then Kazakhstan began giving mixed signals. Ukraine and Belarus declared their intent to become nuclear weapon free zones while Kazakhstan declared it will not give up its strategic forces while any remain in Russia.<sup>32</sup>

Finally, the United States, Russia, and the three other nuclear republics agreed that Ukraine, Belarus, and Kazakhstan will give up their strategic nuclear weapons by the end of the decade. Those same three republics also promised not to seek nuclear weapons again.<sup>33</sup> But until the non-Russian strategic nuclear weapons have been taken off alert, deactivated, and destroyed - what?

Can deterrence by threat of denial of war aims or punishment after the fact continue? What would be the war aims of the Commonwealth of Independent States with regard to a massive nuclear attack against the United States? Can there be a rational war aim for any of the four nuclear republics? Russia inherited about three-fourths of the former Soviet Union's nuclear arsenal, but there are more than enough strategic weapons in any of the other three republics to cause unimaginable damage to the United States.<sup>34</sup>

### Targeting strategies

Should U.S. Peacekeeper and Minuteman ICBMs be targeted against the fixed ICBM fields in Russia, Ukraine, and Kazakhstan as well as the main bases for the mobile ICBMs in Russia and Belarus? Unless U.S. missiles have "real time" retargeting capabilities and U.S. warning systems can identify immediately the actual launch points, any preplanned retaliatory attack could have a large number of warheads aimed at empty silos and deserted main bases. These warheads will have absolutely no effect on the

outcome of any conflict unless it were to devolve into a prolonged nuclear war and reconstitution is both possible and expected. These warheads would, we hope, prevent such preparations for a second or subsequent attack against any undamaged or reconstituted U.S. targets.

Should the U.S. target heavy bomber bases? Again the questions are which bases and with what systems. Because the U.S. strategy is one of "second strike," the other side will shoot first. Then it is certain that no operational bombers will be on the ground at main bases when any U.S. warheads arrive. Their bombers need only take off at the same time as, or just before, the ICBM launch. If such activity were to be detected by national warning systems, would it be identified for what it is and in time to make a rational decision?

Should we attack the leadership relocation facilities - those that we've identified as having been under construction or in renovation and upgrading for over forty years? A U.S. retaliatory attack can't prevent the commanders from executing the strike - it's done. Should we attack to keep them from coordinating follow-on strikes? If we do attack anyway, can we destroy facilities that are buried 200 to 300 meters and perhaps even deeper.<sup>35</sup> If we can destroy them, should we? If these sites really are the command center for the war planners and commanders, doesn't our leadership need somebody to negotiate with towards a conflict termination? If we can and do destroy the command and leadership facilities, would the conflict keep

going until their side runs out of missiles because there's no one in authority on the other side to give "cease fire" orders?

### **Targeting "allies"**

The end of the Warsaw Pact and the breakup of the Soviet Union as well as the most recent offer and counter-offer between Presidents Bush and Yeltsin result in a probability of a massive armored attack against "West Europe" or of an all-out nuclear strike against the United States that is so remote as to be vanishingly small. Furthermore, Bush and Yeltsin have declared that the U.S. and Russia are not only no longer potential enemies but are, in fact, friends if not "allies," and Marshal Shaposhnikov stated that the Commonwealth of Independent States has no enemies.<sup>36</sup> Boris Yeltsin also has declared that the nuclear weapons of the Commonwealth would no longer be aimed at American cities.<sup>37</sup> But what does this statement really mean? Have certain strategic targets such as the Pentagon and White House been granted sanctuary? Were Soviet weapons formerly aimed at American cities purely as countervalue targets? Might it mean some of both? Another interpretation of Yeltsin's statement is that Russian missiles will no longer be targeted against any non-military activities in the U.S.<sup>38</sup> This statement carries a much stronger implication of past countervalue Soviet targeting. Whatever was said, implied, or meant, it is a meaningless announcement since the U.S. cannot monitor the aimpoints of the strategic ICBMs within the Commonwealth of Independent States.

### Other requirements

It has been argued that with the collapse of communism and the breakup of the Soviet Union that the proliferation of weapons of mass destruction (nuclear, chemical, and biological) and the missile delivery systems for those weapons, especially nuclear, is the most urgent threat to world peace and security. House Armed Services Committee Chairman Les Aspin called the Gulf War a symbol of the most demanding challenge of the new post-Soviet era: "a rogue power with mass destruction weapons and a strong bent for terrorism." Congressman Aspin went on to say that the general likelihood of war has increased as has the threat of nuclear conflict.<sup>39</sup> And the military chief of staff of India reportedly concluded that one should "(N)ever fight the U.S. without nuclear weapons."<sup>40</sup>

Secretary of Defense Cheney has said that at least 15 developing countries will have a ballistic missile capability by the year 2000 and eight have or could be near to acquiring a nuclear capability as well. Some 30 countries also may have chemical weapons and there may be 10 with biological weapons.<sup>41</sup> None of these countries would be able to threaten the survival of the United States to the extent that the former Soviet Union did, but the potential destruction and loss of life is still beyond imagination.

There is much debate over the need for and indeed the usefulness of nuclear weapons beyond deterring the nuclear republics of the Commonwealth. Former Air Force Secretary Thomas

Reed chaired a nuclear targeting study at the request of General Lee Butler, the Director of the Joint Strategic Target Planning Staff. That report states a "nuclear expeditionary force" should be formed to counter a Third World chemical weapons attack.<sup>42</sup> And former Under Secretary of Energy John Deutch writes that "theater nuclear weapons have perhaps their most significant role in deterring regional conflicts and the use of nuclear, chemical and biological weapons."<sup>43</sup>

But former Secretary of Defense Robert McNamara reportedly stated that the Reed report was "weakly constructed and weakly argued" with respect to U.S. nuclear weapons deterring conventional military actions by lesser powers when modern conventional U.S. weapons can so precisely attack their targets and overwhelm most opponents.<sup>44</sup> In fact, McNamara and colleagues wrote in *Foreign Affairs* that there is no conceivable threat to the U.S. for which nuclear weapons would be a credible deterrent.<sup>45</sup> It seems significant that McNamara chose to use the word "most" instead of "any" in referring to lesser powers as opponents. Which country or countries might not be overwhelmed by a massive attack by precision weapons? Maybe he was questioning whether some lesser power would not be deterred from unacceptable actions even with the knowledge of U.S. capability or if the leadership of some country might not "miscalculate" as Saddam Hussein did in 1990.<sup>46</sup>

The expeditionary force appears to be part of a radically revised targeting concept proposed in the Reed report. This



report recommends maintaining about 5000 nuclear weapons targeted against "every reasonable adversary."<sup>47</sup> The recommendations are more complex than this reporting indicates. There are, in fact, five separate plans with nuclear and nonnuclear weapons targeted against "every reasonable adversary."<sup>48</sup> The Reed report recommendations seem to have had a profoundly desirable effect: President Bush's State of the Union address contained an initiative to lower the U.S. strategic nuclear stockpile to about 4,700 weapons.<sup>49</sup>

But what is a "reasonable" target? Is there such a thing today? Will there be next month? Next year? In 1997? Do we target to deter aggression or to prepare for war? Any future target list will not be what it was during the Cold War. Who do we deter? What would be our war aims? Does it make any sense to target anything now that the USSR has been disestablished and Russia and the Commonwealth of Independent States are our friends and allies?

What was Saddam Hussein's "most valued asset" that we might have targeted (with a nuclear weapon?) if he had an atomic bomb and we knew that he did? What could the U.S. threaten as a response to Saddam's use of a single atomic bomb against U.S. or Coalition forces? Would the U.S. retaliate with nuclear weapons if there were no U.S. casualties?

### **Conventional-only deterrence**

Are there any targets for U.S. nuclear weapons in the New World Order? Smart weapons - almost brilliant weapons - were used with great success in the Persian Gulf air campaign. Sea-launched precision weapons were also very effective against targets in Iraq. A precision guided, penetrating bomb was designed, developed, tested, and used against a buried Iraqi command/communications bunker.<sup>50</sup>

If our conventional weapons have the pinpoint accuracy demonstrated in the Persian Gulf, do we need nuclear weapons to threaten a potential adversary's most valued assets? If the adversary is any of the Commonwealth's republics with a nuclear arsenal with ICBMs in hardened silos and with buried command and control and leadership relocation bunkers, the answer is "yes." These classes of targets do require nuclear weapons because the best conventional weapons in the U.S. inventory - even precision guided weapons - are not enough against bunkers buried at least 200 meters or silo doors that may be too thick even for current armor-piercing bombs. The bombing accuracy of the Gulf War will not be achievable because Navy and Air Force fighter aircraft cannot reach the interior of the Commonwealth to designate the targets.

### **Uncertainty**

What then is "the threat" to the U.S.? The danger is that most of the strategic nuclear weapons of the Soviet Union still

exist and many of those are targeted against the United States - even if they are no longer aimed at U.S. cities or other non-military activities. Despite the harsh economic problems throughout the Commonwealth, Lieutenant General James R. Clapper, Jr., Director of the Defense Intelligence Agency, testified in mid-January that the most modern strategic systems (SS-18 Mods 5/6, SS-24, and SS-25) are still being deployed.<sup>51</sup> In early April, General Butler, as Commander in Chief, Strategic Air Command, told the House Armed Services Committee (HASC) Defense Policy Panel that the former Soviet Union has not scaled back its strategic nuclear forces and, in fact, continues to robustly fund its nuclear laboratories.<sup>52</sup>

Russia inherited about 75% of the Soviet Union's strategic arsenal and the other nuclear republics have sufficient weapons to cause massive destruction. So long as these weapons remain, the U.S. must continue to target them and the command and control system. The Director of Naval Intelligence, Rear Admiral Ted Sheafer, provided a quite logical rationale for this precautionary posture during an interview with *Inside the Navy*:

Intents can change overnight, but capabilities take years to develop, and I think that's something to bear in mind. I'm not waving the flag and saying the Russian bear is coming, or anything like that, because I realize that their intent right now is peaceful, but nonetheless they are the second-most dominating

military in the world, and we would be foolish, in my opinion, not to retain a capability to understand them.<sup>53</sup>

General Butler said much the same in his testimony before the HASC's Defense Policy Panel:

My sense is at this point, unless I see something contrary, (is) that they are going to have a competent and fairly large land-based ICBM force and some semblance of long-range aviation. I would urge that there is no precipitous drawdown in forces until we have some better understanding of how hard realities of economic collapse play into their long-range plans for force modernization.<sup>54</sup>

Further, the Reed report also concluded that nuclear weapons must still be targeted at the territories of the former Soviet Union as "insurance in the event that the post-Soviet experiment in democracy does not prevail".<sup>55</sup>

#### **Proliferation and terrorism**

Can any U.S. nuclear stockpile - the 6,000 accountable strategic weapons allowed by START, the 4,700 strategic weapons in President Bush's State of the Union address, or the 2,000 to 2,500 proposed by Russia's President Yeltsin - deter a Third

World madman? Is it credible for the United States to threaten nuclear retaliation - even one Minuteman III RV - in response to an attack against U.S. forces with a simple, first-generation atomic bomb or ballistic missile warhead? Could we identify the attacker if the delivery system were an unmarked truck or train or ship or airliner? Could we justify nuclear retaliation weeks, months, or years later if we finally identify the attacker? How many civilians, and perhaps even "innocent" military forces, would die in an attack that might, and more likely might not, exact a very personal revenge against a madman? What if the "guilty" government has been overthrown or otherwise replaced?

If a regional conflict should escalate into a nuclear war but does not include a direct attack on U.S. forces, what should the U.S. do? How should the U.S. respond if its forces are attacked by nuclear weapons? Could the U.S. ever convince itself and the American public that we should respond "in kind" to an atomic attack by a "rogue power" with a single weapon? If more than one weapon were used, where does the U.S. draw the line? Which explosion becomes "one too many?"

If the government cannot justify a nuclear response to an atomic attack against U.S. forces, how could it ever decide for a nuclear response to a chemical or biological attack with a nuclear weapon? I don't think the U.S. could, although former Air Force Secretary Reed has said that the U.S. should relook its 1979 pledge not to use nuclear weapons against Third World

countries without atomic weapons because attacks with chemical or biological weapons may warrant a U.S. nuclear response.<sup>56</sup>

### Conclusions

Thus, of all the possible targets - some reasonable and some not - only those hardened missile silos and deeply-buried bunkers in the Commonwealth republics, and possibly China, require strategic nuclear weapons. Should the U.S. target these sites as day-to-day policy? That is, does the U.S. need ICBMs and SLBMs to be "on alert" and aimed at these facilities? Given the previous discussion on intentions-versus-capabilities, and because the penalty for overoptimism is completely unacceptable, I strongly believe that U.S. ICBMs should remain targeted at all operational strategic launch facilities of the Commonwealth republics as well as their government and military relocation and command and control facilities. Further, U.S. strategic submarines should continue their patrols with their SLBMs targeted against the Commonwealth's other military forces and major military installations. Some SLBMs also should be held in reserve for follow-on attacks against surviving strategic launch facilities as well as the government and military bunkers.

The Departments of Defense and Energy should complete the EPW development program authorized in September, 1988, by then-Secretary of Defense Frank Carlucci<sup>57</sup> and deploy the warhead on a secure, but responsive delivery system to add still another level of risk to those bunkers.

The U.S. will then have "at risk" all the "most valued assets" within the former Soviet Union - including the lives of the government and military leaders - maintaining deterrence and insuring freedom and security for America.

### Works Cited

1. Bush, George. National Security Strategy of the United States. The White House:GPO, August 1991; p. 3.
2. 1991 Joint Military Net Assessment. The Pentagon, Washington:GPO, March 1991; p. 1-3.
3. Powell, Colin L. "Base Force: Living with Success." Defense 92. The Pentagon, Washington:GPO, January/February 1992; p. 15.
4. Military Forces in Transition. The Pentagon, Washington:GPO, September 1991; p. 47.
5. Hiatt, Fred. "Nuclear Control Issue Remains Uncertain." The Washington Post December 10, 1991; p. A34.
6. Gertz, Bill. "Nuclear blast was test for new Chinese ICBM." Washington Times May 23, 1992; p. 3.
7. Summary of Foreign Nuclear Detonations through December 31, 1983. Department of Energy, Washington: 1984.
8. Cheney, Dick. Annual Report to the President and the Congress. The Pentagon, Washington:GPO, January 1991; p. 4.
9. 1991 Joint Military Net Assessment. op. cit.; p. 6-1.
10. Bush. op. cit.; p. 25.
11. Drew, Dennis M. and Snow, Donald M. Making Strategy: An Introduction to National Security Processes and Problems. Maxwell Air Force Base, AL: Air University, 1988; p. 127 and Gray, Colin S. "War Fighting for Deterrence." The Journal of Strategic Studies. Vol. 7, No. 1, London:Frank Cass, 1988; pp. 5-28 reproduced in Nuclear Strategies. Maxwell Air Force Base, AL: Air University, December 1985; pp. 24-36.
12. Shulstad, Raymond A. Peace is My Profession: A Soldier's View of the Moral Dimension of US Nuclear Strategy. Washington, National Defense University, 1986; p. 11.



13. Canan, James W. "Scowcroft Urges Caution." Air Force Magazine Vol. 73, No. 3, March 1990; p. 97.
14. Military Forces in Transition. op. cit.; p. 41.
15. Report of the President's Commission on Strategic Forces. Washington:GPO, April 1983; p. 6.
16. Dudley, Robert S. "Strategic Forces at the Brink of START." Air Force Magazine Vol. 71, No. 2, February 1988; p. 42.
17. Bundy, McGeorge. Danger and Survival: Choices about the Bomb in the First Fifty Years. New York:Random House, 1988; p. 374.
18. Sherman, Robert. "A Manual of Missile Capability." Air Force Magazine Vol. 60, No. 2, February 1977; p. 35.
19. Payne, Keith B. "What if We 'Ride Out' A Soviet First Strike?" The Washington Quarterly Vol. 7, no. 4, Fall 1984; pp. 85-92 reproduced in Nuclear Strategies, op. cit.; pp. 37-41.
20. The VNTK System. Defense Intelligence Agency and Defense Nuclear Agency, Washington: March 1990.
21. Mehuron, Tamar A. "Characteristics for Nuclear Weapon Systems, Circa 2006." Air Force Magazine Vol. 75, No. 3, March 1992; p. 10.
22. Dudley, op . cit.; p. 40.
23. Ball, Desmond and Toth, Robert C. "Revising the SIOP: Taking War-Fighting to Dangerous Extremes." International Security Vol. 14, No. 4, Cambridge, MA:MIT, Spring 1990; p. 75.
24. Toth, Robert C. "America's Changing Nuclear Strategy: U.S. Shifts Nuclear Response Strategy; New Formula Designed to Eliminate Soviet Leadership Early in Conflict." Los Angeles Times July 23, 1989; pp. 1+.
25. Grier, Peter. "Missile Race Goes Underground: Testing a New Warhead." Christian Science Monitor June 27, 1989; pp. 1+.
26. Glasstone, Samuel and Dolan, Philip J., eds. The Effects of Nuclear Weapons, Third Edition, Washington:GPO, 1977; pp. 221 & 552.
27. Soviet Military Power 1986. The Pentagon, Washington:GPO, March 1986; p. 25.

28. "Changes in Defense Structure." Policy Letter. Kelly Air Force Base, TX:AF News, November 1991; p. 1.
29. Soviet Military Power: Prospects for Change 1989. The Pentagon, Washington:GPO, September 1989; p. 45.
30. Military Forces in Transition, op. cit.; p. 32.
31. Seward, Deborah. "Russia, Ukraine spar over military spoils." Washington Times January 6, 1992; p. 8.
32. Hoagland, Jim. "Bush's Big Chance." OpEd. The Washington Post January 28, 1992; p. A21.
33. Oberdorfer, Don. "3 Ex-Soviet States To Give Up A-Arms." The Washington Post May 24, 1992; p. A1.
34. Correll, John T. "Snapshots of Soviet Power." Air Force Magazine Vol. 74, No. 12, December 1991; p. 12.
35. Military Forces in Transition, op. cit.; p. 41.
36. Lloyd, John. "Military chief says CIS has no enemies." London Financial Times February 5, 1992; p. 2.
37. "Yeltsin Vows to End Aiming of Missiles at American Cities." The Washington Post January 27, 1992; p. 7.
38. Surikov, Boris. "USSR Breakup Makes Nuclear Reductions a Five-Way Deal." Armed Forces Journal International March 1992; p. 37.
39. Johnson, Haynes. "Lessons From the Gulf War." The Washington Post January 17, 1992, p. A2.
40. Ibid.
41. Cheney, Richard. "US defense strategy for an era of uncertainty." International Defense Review January 8, 1992; p. 7.
42. Ryan, Randolph. "A shifting rationale by the Pentagon on nuclear force." Boston Globe January 7, 1992; p. 13.
43. Deutch, John M. "Nuclear Weapons in the New World Order." Technology Review Vol. 95, No. 2, February/March 1992; p. 68.
44. Smith, R. Jeffrey. "U.S. Urged To Cut 50% Of A-Arms: Soviet Breakup Is Said To Allow Radical Shift In Strategic Targeting." The Washington Post January 6, 1992; p. A1+.

45. Correll, John T. "Shall We Dump Deterrence?" Editorial. Air Force Magazine Vol. 75, No. 1, January 1992, p. 6.
46. Ibid.
47. Ryan, op. cit.
48. Smith, op. cit.
49. Scarborough, Rowan. "Cheney proposes cutting B-2, Seawolf." (Chart) Washington Times January 30, 1992; p. 5.
50. Gertz, Bill. "Gulf war covert operations stories surface." Washington Times January 16, 1992; p. 9.
51. Morrocco, John D. "Drastic Cuts in Weapons Orders Under Way in Former Soviet Union." Aviation Week & Space Technology January 27, 1992; p. 34+.
52. "Former Soviets Continue To Modernize Nuclear Forces -- SAC Chief." Defense Daily April 9, 1992; p. 53.
53. "Another Top Navy Official Questions Merits of Aspin's Base-Force Concept." Inside the Navy April 30, 1992; p. 1.
54. Defense Daily, op. cit.
55. Smith, op. cit.
56. Ibid.
57. Ball and Toth, op. cit.; p. 76.